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THE HILLEGAS-THORNDIKE SCALE FOR MEASUREMENT OF QUALITY IN ENGLISH COMPOSITION BY YOUNG PEOPLE

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A scale for measuring the merit of English composition by young people, prepared by Professors Hillegas and Thorndike of Teachers College, is given in Professor Thorndike's recent book, *Education*.¹ The method employed in deriving the scale is given in detail in a recent number of the *Teachers College Record*.² Some seven thousand compositions of young people were divided into ten classes, each roughly representing the same degree of excellence. From these classes seventy-five samples were selected. To these were added artificial samples of poorer quality than could be found in actual school work, in order to fill in the lower ranges of the proposed scale. All together the set consisted of eighty-three samples which varied from the poorest to the best by small degrees of quality. About one hundred individuals arranged these samples in the order of their excellence. From the judgments of these individuals a smaller group of twenty-seven samples was selected as containing all the important steps in quality from the poorest to the best. Two other samples were added as the investigation proceeded, to fill in gaps in the scale. Five hundred and two individuals judged these sets of samples and on the basis of their judgments the scale was derived by the method of right and wrong cases.³ The theory of this method as applied to this study is stated as follows: "Differences that are equally often noticed are equal, unless the differences are either always or never noticed." The zero point in the scale was located by the combined judgment of twenty-eight individuals, nine of whom were "men of special

¹ Edward L. Thorndike, *Education*, The Macmillan Co., pp. 214-19.

² Milo B. Hillegas, Ph.D., "A Scale for the Measurement of Quality in English Composition by Young People," *Teachers College Record*, September, 1912, pp. 1-54.

³ Fullerton and Cattell, *On the Perception of Small Differences*, p. 12.

literary ability," eleven "gifted teachers familiar with secondary education," and eight "psychologists familiar with the significance of scales and zero points in the case of intellectual abilities and products." The scale as finally formed represents the combined judgments of five hundred and fifteen individuals who read in whole or in part the material from which the scale was finally selected. The scale is as follows:

o

DEAR SIR: I write to say that it aint a square deal Schools is I say they is I went to a school. red and gree green and brown aint it hito bit I say he don't know his business not today nor yeaterday and you know it and I want Jennie to get me out.

18

the book I refer to read is Ichabod Crane, it is an grate book and I like to rede it. Ichabod Crame was a man and a man wrote a book and it is called Ichabod Crane i like it because the man called it ichabod crane when I read it for it is such a great book.

26

Advantage evils are things of tyranny and there are many advantage evils One thing is that when they opress the people they suffer awful I think it is a terrible thing when they say that you can be hanged down or trodden down without mercy and the tyranny does what they want there was tyrans in the revolutionary war and so they throwed off the yok.

37. SULLA AS A TYRANT

When Sulla came back from his conquest Marius had put himself consul so sulla with the army he had with him in his conquest seized the government from Marius and put himself in consul and had a list of his enemys printy and the men whoes names were on this list we beheaded.

47. DE QUINCY

First: De Quincys mother was a beautiful women and through her De-Quincy inhereted much of his genius.

His running away from school enfluenced him much as he roamed through the woods, valleys and his mind became very meditative.

The greatest enfluence of De Quincy's life was the opium habit. If it was not for this habit it is doubtful whether we would now be reading his writings.

His companions during his college course and even before that time were great enfluences. The surroundings of De Quincy were enfluences. Not

only De Quincy's habit of opium but other habits which were peculiar to his life.

His marriage to the woman which he did not especially care for.
The many well educated and noteworthy friends of De Quincy.

58. FLUELLEN

The passages given show the following characteristic of Fluellen: his inclination to brag, his professed knowledge of History, his complaining character, his great patriotism, pride of his leader, admired honesty, revengeful, love of fun and punishment of those who deserve it.

67. ICHABOD CRANE

Ichabod Crane was a schoolmaster in a place called Sleepy Hollow. He was tall and slim with broad shoulders, long arms that dangled far below his coat sleeves. His feet looked as if they might easily have been used for shovels. His nose was long and his entire frame was most loosely hung together.

77. GOING DOWN WITH VICTORY

As we road down Lombard Street, we saw flags waving from nearly every window. I surely felt proud that day to be the driver of the gaily decorated coach. Again and again we were cheered as we drove slowly to the postmasters, to await the coming of his majestie's mail. There wasn't one of the gaily bedecked coaches that could have compared with ours, in my estimation. So with waving flags and fluttering hearts we waited for the coming of the mail and the expected tidings of victory.

When at last it did arrive the postmaster began to quickly sort the bundles, we waited anxiously. Immediately upon receiving our bundles, I lashed the horses and they responded with a jump. Out into the country we drove at reckless speed—everywhere spreading like wildfire the news, "Victory"! The exilation that we all felt was shared with the horses. Up and down grade and over bridges, we drove at breakneck speed and spreading the news at every hamlet with that one cry "Victory"! When at last we were back home again, it was with the hope that we should have another ride some day with "Victory".

83. VENUS OF MELOS

In looking at this statue we think, not of wisdom, or power, or force, but just of beauty. She stands resting the weight of her body on one foot, and advancing the other (left) with knee bent. The posture causes the figure to sway slightly to one side, describing a fine curved line. The lower limbs are draped but the upper part of the body is uncovered. (The unfortunate loss of the statue's arms prevents a positive knowledge of its original attitude.) The eyes are partly closed, having something of a dreamy langour. The nost is perfectly cut, the mouth and chin are moulded in adorable curves.

Yet to say that every feature is of faultless perfection is but cold praise. No analysis can convey the sense of her peerless beauty.

93. A FOREIGNER'S TRIBUTE TO JOAN OF ARC

Joan of Arc, worn out by the suffering that was thrust upon her, nevertheless appeared with a brave mien before the Bishop of Beauvais. She knew, had always known that she must die when her mission was fulfilled and death held no terrors for her. To all the bishop's questions she answered firmly and without hesitation. The bishop failed to confuse her and at last condemned her to death for heresy, bidding her recant if she would live. She refused and was led to prison, from there to death.

While the flames were writhing around her she bade the old bishop who stood by her to move away or he would be injured. Her last thought was of others and De Quincy says, that recant was no more in her mind than on her lips. She died as she lived, with a prayer on her lips and listening to the voices that had whispered to her so often.

The heroism of Joan of Arc was wonderful. We do not know what form her great patriotism took or how far it really led her. She spoke of hearing voices and of seeing visions. We only know that she resolved to save her country, knowing though she did so, it would cost her her life. Yet she never hesitated. She was uneducated save for the lessons taught her by nature. Yet she led armies and crowned the dauphin, king of France. She was only a girl, yet she could silence a great bishop by words that came from her heart and from her faith. She was only a woman, yet she could die as bravely as any martyr who had gone before.

The figures above each selection in the scale represent its exact value in units of the scale extending from 0 to 93. Quality 37 ("Sulla as a Tyrant") is understood to differ from quality 47 ("De Quincy") by exactly the same amount as quality 67 ("Ichabod Crane") differs from quality 77 ("Going Down with Victory"); and quality 93 ("Venus of Melos") is understood to be just one point less than twice as good as quality 47. Professor Thorndike says:¹ "By using such scales, the absolute gain which any pupil made in any year could be measured in the same way as his gain in height, weight, wages, or pulse rate, and the results of different means and methods of teaching could be demonstrated with exactitude instead of being guessed at."

There can be no doubt of the importance of securing definite standards for the measurement of school products in place of the indefinite and widely varying standards employed in different

¹ *Education*, p. 214.

schools and by different teachers in the same school. Neither can there be any doubt regarding the elaborate pains with which this scale for the measurement of English composition has been derived. However, one who examines this scale can hardly fail at first to be skeptical regarding its practical availability for measuring the merit of so highly complex a product as the composition of young people in their teens; and those who are accustomed to scoff at the idea of a science of education will doubtless find material for ridicule in the claims made by its authors for the exactness with which this scale may be used.

For the purpose of a practical test, the author of this article submitted eight selections taken from the actual compositions of high-school pupils to forty-two teachers of English composition in a number of high schools, normal schools, and colleges, all of sufficiently high standing to make their judgments worthy of respect. The selections were also submitted to two other groups of judges, one consisting of five teachers of English in the University High School, in which an effort has been made for some time to secure uniform standards of grading; the other consisting of a class of sixteen graduate students taking a course in the statistical study of school materials in the School of Education in the University of Chicago. With the material to be graded was submitted to each a copy of the Hillegas-Thorndike scale and they were asked to grade the material carefully according to the scale and to submit their results without consultation with each other. It is probably fair to assume that these individuals were as competent to apply the scale as the average persons who could be expected to apply it in actual practice.

The material furnishing the basis of the test is given below, the different selections being designated by the letters A-H. It perhaps should be stated that selections A and B were written by members of an industrial class who had completed only six grades in an elementary school.

A

Football. The place was 50×100 ft, and there was a ten boys playing F. B. our captain was Kelley and the score was 26 to 0. Its a very interesting game because it makes the man helty.

I like to play Football or baace Ball. But I dont know how to play eather one I like to learn it.

B

The boys call out at one time, we want to play football. One boy hollars captain on one side. The game is started, and I am afraid I will get hurth. All at once I see the boys running I run to I jump on one boy. I get a goo and tight grip, and I was down on the ground.

C

Anyone trying for this Rhodes scholarship must comply to three rules. The applicant must have had two years in some college of good standing must be unmarried, and must be between nineteen and twenty one years of age.

"The rules seem quite easy for a scholarship, don't you think so girls?" asked Marion.

"Yes, but then it is not so easy as you think because there are many other applicants," replied Helen, "But continue."

Then, Mr. Porter told us about Oxford. There are twenty one colleges at Oxford, but they are shut in by a high wall and are separated from each other.

"Why! I thought Oxford contained just one large college instead of twenty-one," said Helen.

"Yes, I replied and there are a good many other things which greatly surprised me.

D

When one has a class on the third floor of Blaine Hall and one on the third floor of Belfield Hall the hour following, the five minutes allowed between classes does not make it possible for him to reach his other class on time. Now, when he is absent one day and stops the following day, after class to find out when he may make up his missed lesson he arrives at his next class late. Then perhaps, the teacher has some point she wishes to explain to him, and so retains him a moment. Maybe his locker combination will not work, or perhaps he drops his books, the result is the same in each case, he is late to class. He reaches the class room, five minutes late. He rushes in panting. For who wouldn't be breathless after running up three flights of stairs? As he enters he is confronted with "why are you late?"

To which he pants out. "Third floor of Blaine, couldn't help it."

E

Of the many points which should be taken into consideration in choosing a college, one of the most important is that of the size of the institution. I am of the opinion that it should be rather small; that is, with an undergraduate body of about two hundred and fifty students. There are a number of reasons for this. In the first place, in a small college like this, a student who has exceptional powers in any branch of interests has more opportunity to come to the fore, and make the most of himself. For example, if a man is an unusu-

ally good runner, although he does not know it, and has not been well-developed, if he is in a small college, he is more likely to go out for track and find out what he can do, than if he is in a large university, discouraged by the great number of athletes around him who are, as this student thinks, so much better than he. Thus he does not try himself out, and some excellent material is wasted. If he had been in a smaller college, he would have tried himself out, and would have developed into a runner worth while, and would have done both himself and his Alma Mater good. On the other hand, if a man is exceptionally bright, and good at his studies, if he is in a smaller college, he will have more opportunity for the individual attention of the instructors, than if he were in a large university, where, besides being distracted from his work by the multifarious interests of a large institution he is prevented from close contact with the professors who have to teach large classes and are hindered from much outside help of the students by the excessive burdens of administrative work.

F

That night, we took dinner at the hotel and, as we were not over anxious to return to scene of destruction, a bunch of us stayed at the hotel the great part of the evening. When we finally did return, we talked and chattered freely as long as we were on the regular hotel walk, but when we turned off on our path through the woods, a sad silence descended upon us. Each of us felt a peculiar fear and gloom. As we came to the place where we turned, we stopped a few minutes, knowing that we would see no welcoming lights nor hear the pleasant noise of talking. When we turned, we saw the ruins bathed in a flood of most beautiful moonlight. The moonshine vied with the strange phosphorescent glow of the ruins, themselves, in making the scene wierd, and terrible. Two men kept watch through the long night, lest the fire break out, again. The next day, with sad hearts, we left the mournful ruins for the more cheerful, if less beloved, city of Chicago.

G

Down the trail to the beach we stumbled, our only illumination the little lamp, and went along the shore, very silently, for each one was too much occupied in shivering to say anything except muttered ejaculations when he stubbed his numbed toe against a rock. Soon, however, we came out on the road, where the footing was much smoother, and here we quickened our pace. After half an hour of pretty steady climbing, we emerged from the woods, and struck a little footpath, which led across the rocky pasture land where we really began to feel the cold. The grass was heavy with the first frost, and by the time we had gone a hundred yards, our legs from the knees down were thoroughly drenched with ice-water. But by this time, most of the journey was over, the light of dawn was crawling over the sky, the clear, cheerful call of a white-throated sparrow floated down from a fir nearby, and we really began to think that early morning was a pretty good time of day, after all.

H

Here are the lockers where we kept our books. I wonder if I could open any of them. Here is the one I had during my last year in high school. I wonder who is its owner now. How does it look, in the interior. She and I kept our many belongings within, sometimes in good order, and sometimes, just before a wild and thorough cleaning, in a state of peculiar confusion. I did not like to clean it, then, but how I should enjoy going through it from top to bottom, now, and arranging the books, hers and mine, in neat rows! I try my old combination, but the locker will not open. Here is the other locker. There were four of us, in those days. The interior of this other locker used to be arranged much as ours. I wonder if the owners of these two lockers are as good friends as we four were.

The following tables give the essential features of the results obtained from the gradings of the three groups, showing the lowest grade given to each selection by a member of each group, the highest grade, the maximum variation, the average grade, and the average variation of each individual from the average grade of the entire group.

FORTY-TWO TEACHERS OF ENGLISH COMPOSITION IN HIGH
SCHOOLS, COLLEGES, AND NORMAL SCHOOLS

Specimen	Lowest Grade	Highest Grade	Maximum Variation	Average Grade	Average Variation from Average Grade
A.....	o	40	40	17	8
B.....	o	47	47	20	8
C.....	35	86	51	53	11
D.....	47	85	38	71	8
E.....	45	100	55	85	8
F.....	40	93	53	75	8
G.....	67	97	30	84	7
H.....	26	95	69	80	11

SIXTEEN MEMBERS OF GRADUATE CLASS IN EDUCATIONAL TESTS.
SCHOOL OF EDUCATION

Specimen	Lowest Grade	Highest Grade	Maximum Variation	Average Grade	Average Variation from Average Grade
A.....	15	47	32	28	11
B.....	18	37	19	28	6
C.....	26	83	57	59	15
D.....	38	93	55	71	13
E.....	32	95	63	74	8
F.....	65	90	25	77	6
G.....	67	94	27	81	7
H.....	47	93	46	80	11

FIVE TEACHERS IN THE ENGLISH DEPARTMENT OF THE
UNIVERSITY HIGH SCHOOL

Specimen	Lowest Grade	Highest Grade	Maximum Variation	Average Grade	Average Variation from Average Grade
A.....	12	30	18	19	5
B.....	12	42	30	27	7
C.....	47	67	20	60	11
D.....	57	80	23	71	11
E.....	75	100	25	85	5
F.....	64	87	23	77	5
G.....	77	97	20	86	6
H.....	75	95	20	88	7

From this application to school material at least two criticisms of the scale may be made:

1. The scale represents the composite judgment of some five hundred individuals more or less expert as teachers of English, writers, and experts in fields that render their individual judgments worthy of respect. But the scale represents the judgment of no single individual, and the judgment of any single individual or of any group of individuals whose judgment entered into the formation of the scale such as might reasonably be expected to apply the scale to any large body of material necessary to an adequate practical test would not represent the aggregate judgment of those whose arrangement of the material formed the basis of the scale. These individuals varied widely in their judgments, placing the various selections in rather widely varying positions in the scale. But the scale cannot be used in practice by all the persons whose judgments contributed to its formation. It must be used by an individual or by a small group of individuals whose judgments may be expected to vary as widely as did those in the making of the scale. As there is no such person as the average pupil, so there is no average judgment which can be applied to a test of school products. This of course could be said of any similar test to be applied to school products and furnishes in itself no adequate reason for the rejection of this scale. It is, however, a more serious objection in the case of the composition scale because of the highly complex nature of the material to which it must be applied.

2. A more serious objection to this particular scale may be made on the ground that the material employed is not representative. In estimating the value of written composition there are two elements that may roughly be said to be of about equal value—form and content. By form we would mean such elements as correctness or freedom from mistakes of spelling, punctuation, capitalization, syntax; neatness and general good appearance; effective and pleasing sentence structure; organization of material in logically coherent units. A scale for evaluating these elements might be applied with reasonable accuracy and for this purpose the present scale may perhaps be regarded as an excellent one. By content we would mean the quality of the thought, feeling, artistic skill, effectiveness, and originality of expression. As a basis for evaluating this important element, the scale seems to be entirely inadequate. Every selection in the scale that has any thought-content at all is on a subject exceedingly formal, drawn from history or most often from readings in literature. An exception might be made of the scale number 83, "Venus of Melos," which may have been written by one who had seen a reproduction of the statue, but quite as likely by one who had read a description of the statue. One who reads the scale carefully might assume that for some reason all material involving any originality of thought had been carefully excluded. It cannot be supposed that composition subjects in any school were chosen exclusively from such a barren field as is represented by the material in this scale. Certainly no school should be expected to furnish any large amount of material on subjects so far removed from all present-day human experience. It is altogether impossible to compare compositions on subjects that offer opportunity for originality of thought and expression with the formal material found in the scale which depends for its content largely upon the memory of books read or discussed in class. The scale differs in kind from the material to be measured. It is like using a yardstick to determine the weight of material in the physical laboratory.

Good illustrations of this essential difference between the scale and the material graded may be found by a comparison of a few of the selections graded with that part of the scale to which

the average grade assigned makes them most nearly equal. Selection B is given an average quality 18 in the scale. While very crude in form, it will be observed to have a certain vividness and unity of form which the corresponding selection in the scale does not possess. The wide variations in the grading of this selection are doubtless due to the difficulty which the judges experienced in making an exact comparison of material so essentially different in content. The most marked variation occurred in the grading of selection H, in which some judges distinguished a certain fine feeling which influenced the style and gave it unity while one who gave it a very low grade evidently did not observe this excellence at all. From this inherent difficulty in measuring two such dissimilar elements as form and content in written composition, one might suggest the desirability of two scales for the determination of the value of these two elements.